

# ACTS Propagation Studies in Oklahoma

Xuhe Wang  
Robert K. Crane

School of Meteorology, University of Oklahoma

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## Outline

- OK APT Status - Terminal Update
- Reprocessing 4-year OK, MD, BC data
  - ACTS04.XLS Excel Macros
  - OK ACTS Home Page Update
    - HDR File Archives Status



## OK APT Status -Terminal Update

- Replaced ethernet card with ZIP (parallel port) drive on 11/14/97, but failed. Ethernet card was re-installed on 11/30/97. Since then lots of 1-2 seconds gaps in every day data. The problem was fixed by replacing the PC's mother board and all the cards on March 24, 1998. ZIP drive was also installed.
- "Lost default drive" bug in dacs.exe (TSR) was found during testing ZIP drive.
- Fiber optics modem power failed on 6/17/98 - 7/16/98. Many system crashes and data lost during that time period.
- APT system is now working smoothly except WWV card clock jumping problem still remains.



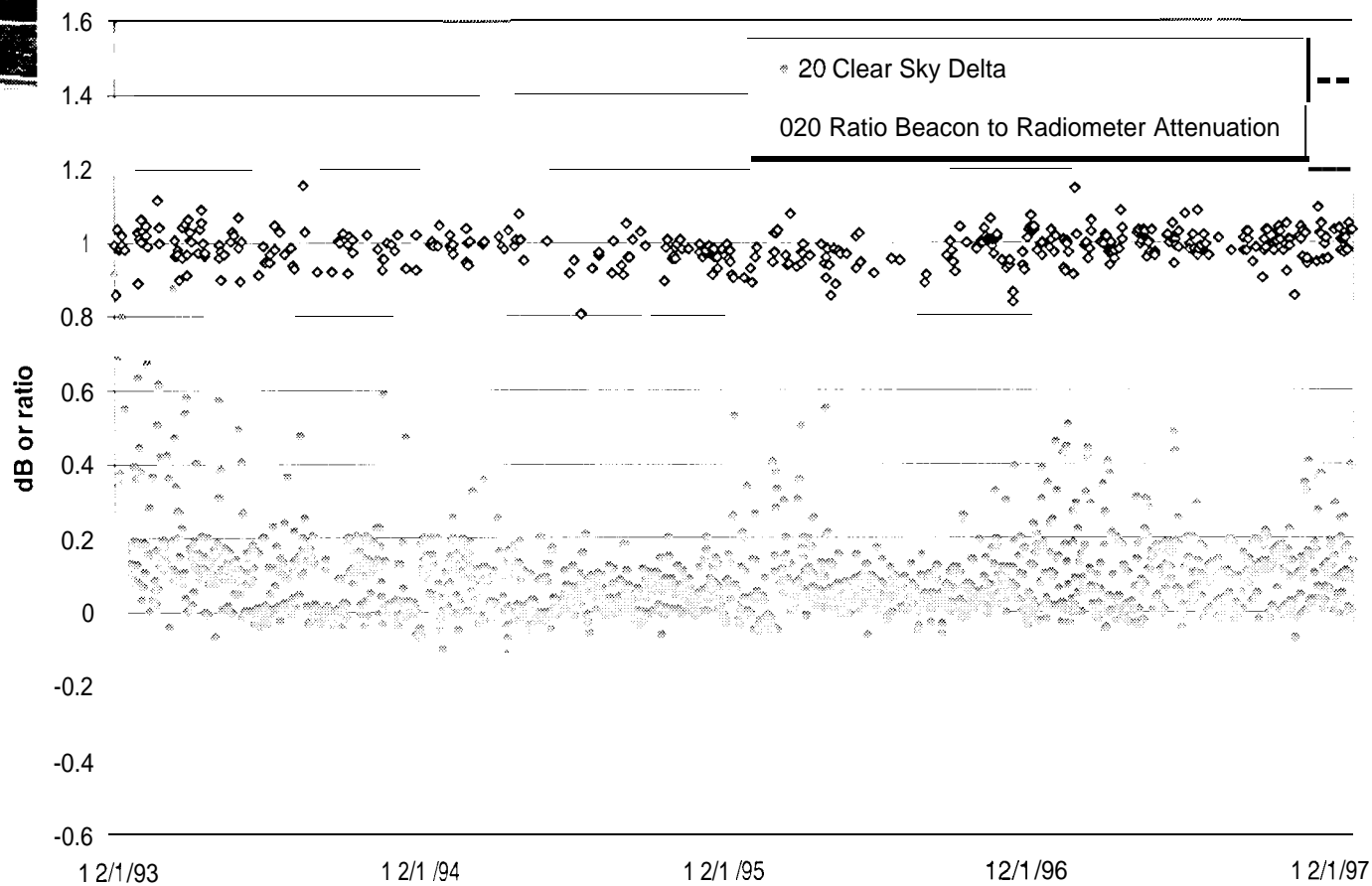
## Reprocessing 4-year OK, MD, BC Data

- A new 333 MHz PentiumII PC was used in reprocessing, which led to find that ACTSPP need updated to run on a fast Pc.
- Weather events, system and operational faults were inserted into .LOG files, and marked bad if necessary. Snow events and rain gauge noises were marked bad in .LOG files.
- Calibration constants were re-adjusted for each site. For BC data calibration was done on a daily basis.
- A radiometer swapping problem were found in ACTSPP program during reprocessing MD data. MD data were then reprocessed second time with the new updated ACTSPP.
- NCDC surface data were used in reprocessing BC and MD data. Oklahoma Mesonet surface data were used in reprocessing OK data.



# Reprocessing 4-year OK, MD, BC Data

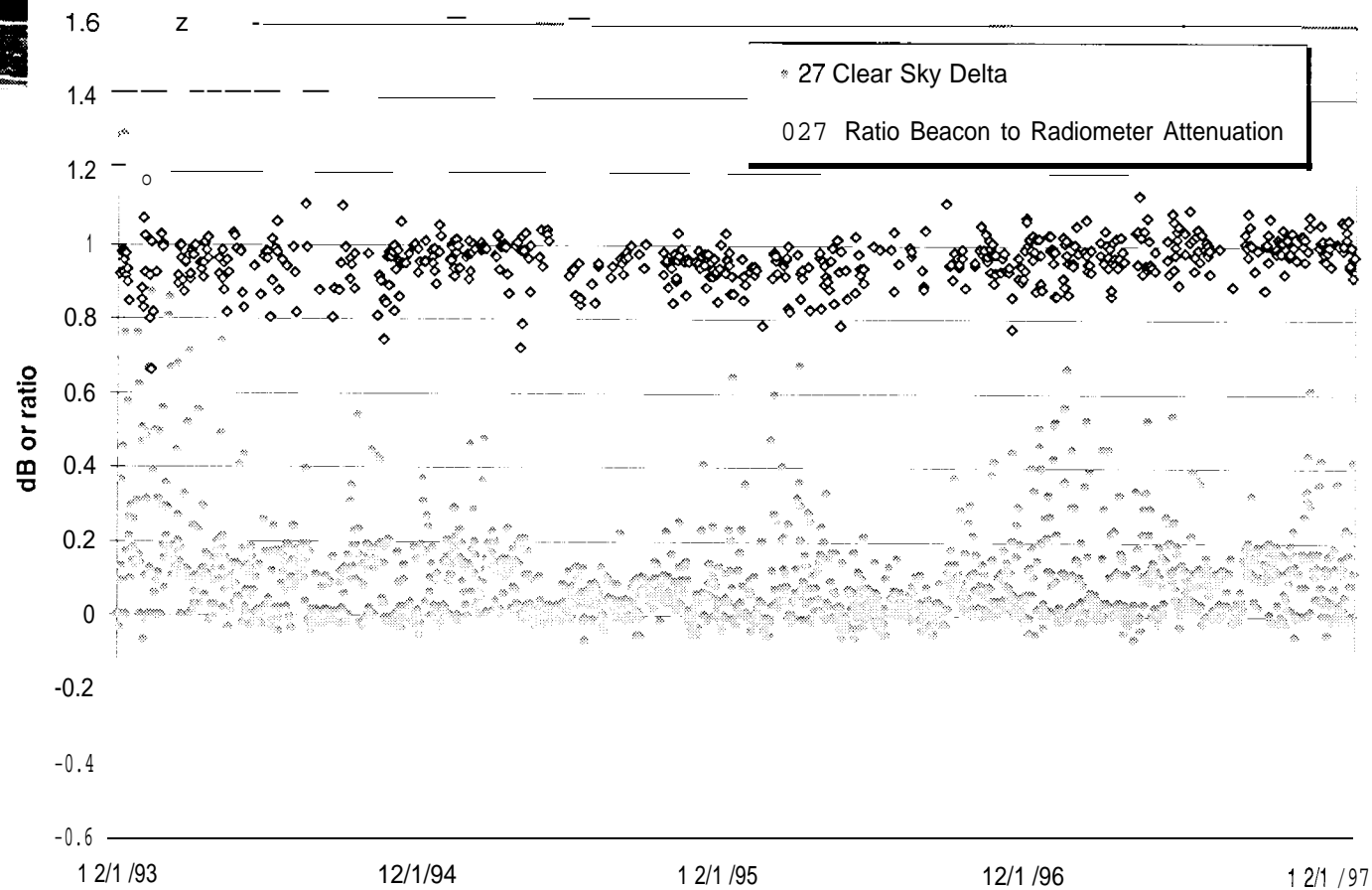
12/1/93 - 12/31/97 BC 20 GHz Calibration





# Reprocessing 4-year OK, MD, BC Data

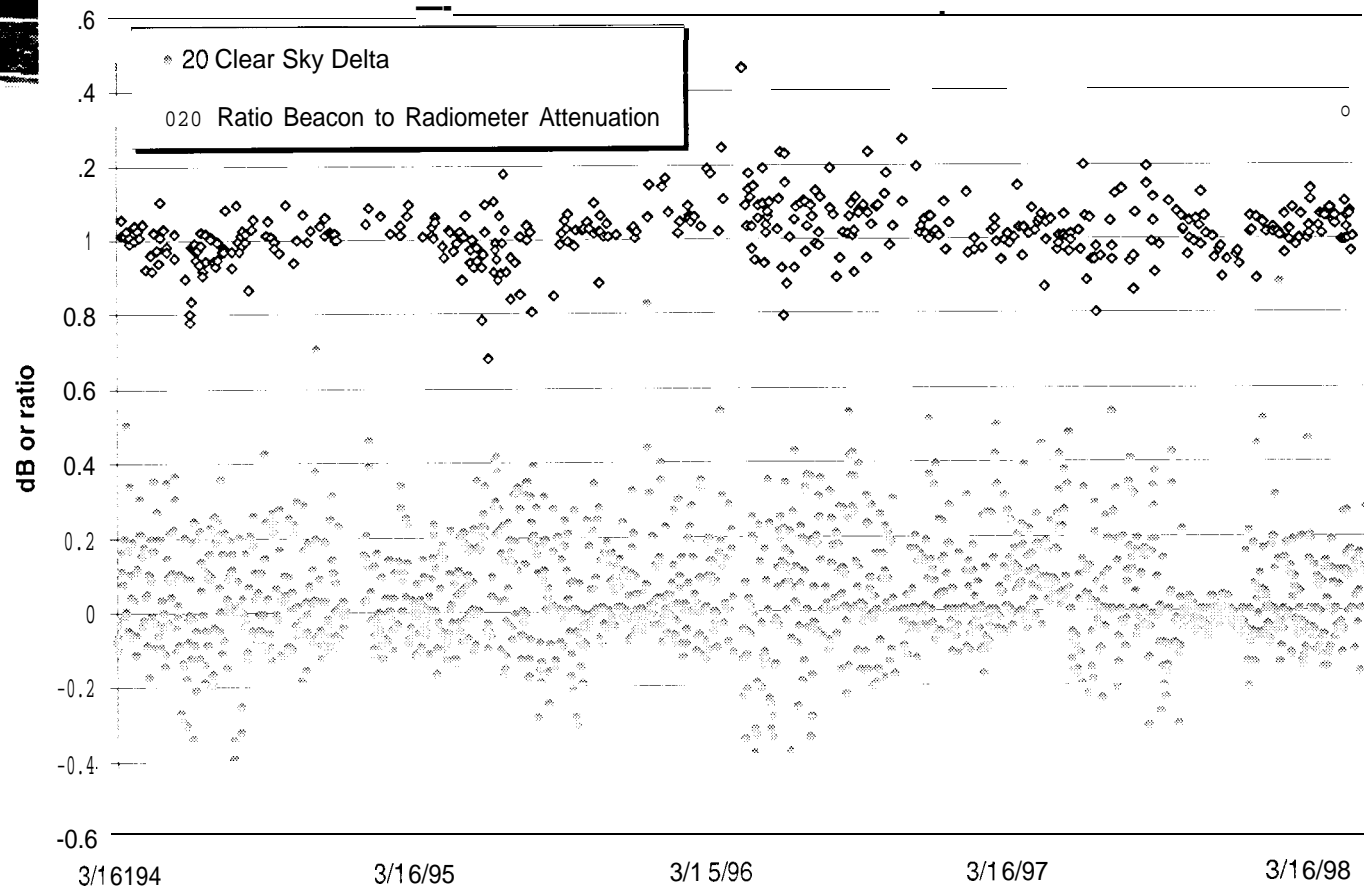
12/1 /93 - 12/31/97 BC 27 GHz Calibration





# Reprocessing 4-year OK, MD, BC Data

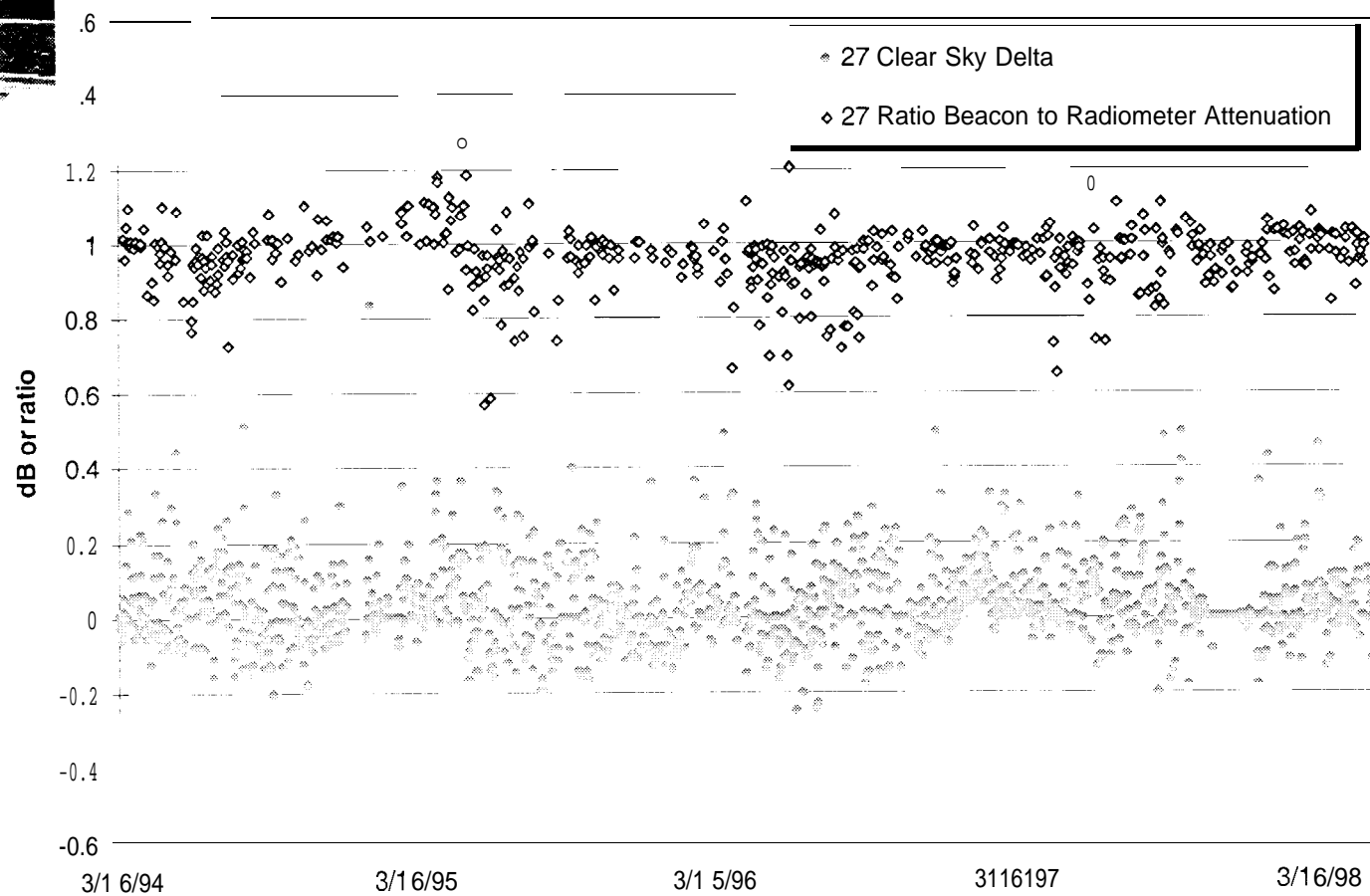
3/1 6/94 - 5/31/98 MD 20 GHz Calibration





# Reprocessing 4-year OK, MD, BC Data

3/1 6/94 - 5/31/98 MD 27 GHz Calibration

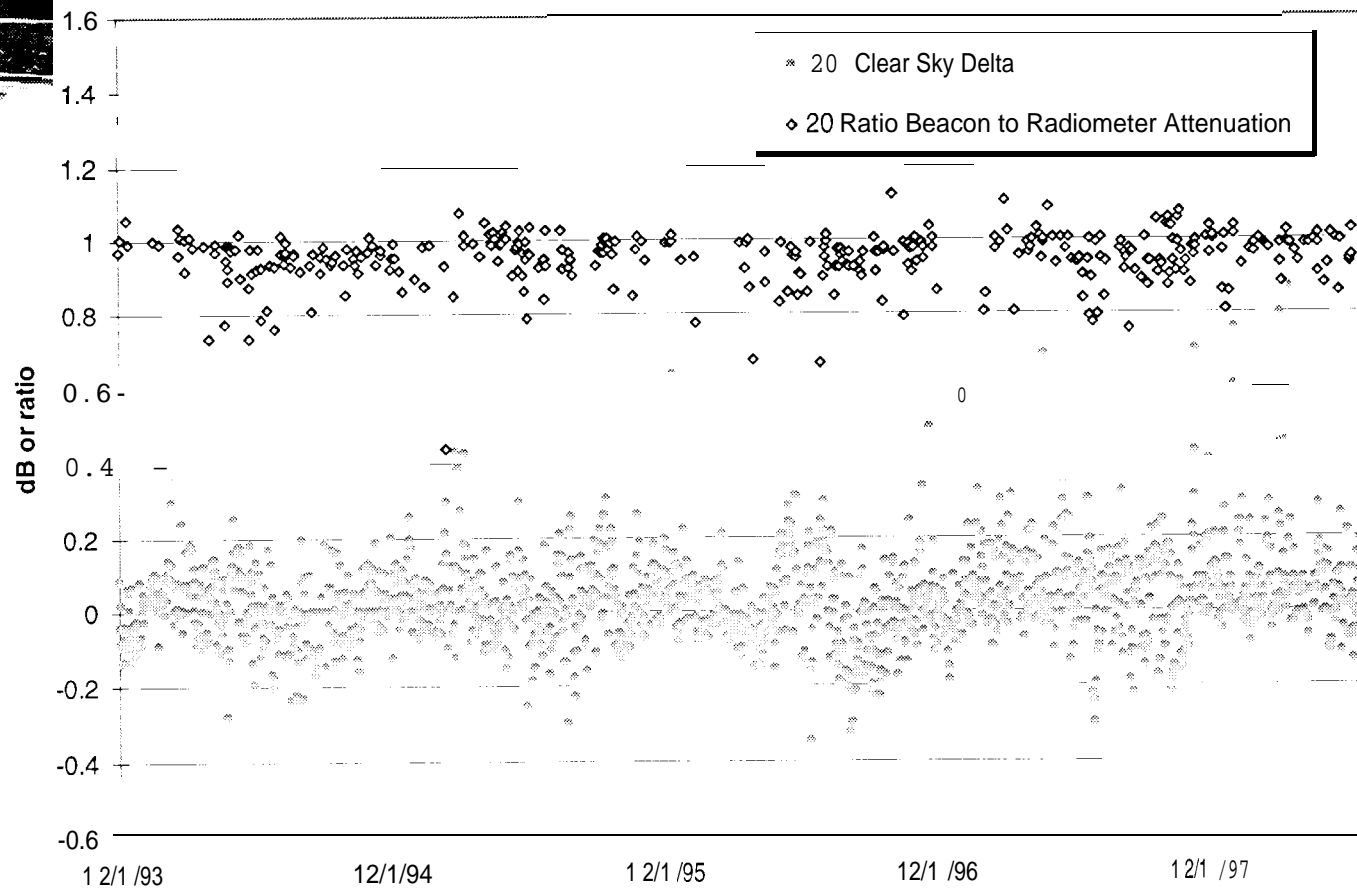






# Reprocessing 4-year OK, MD, BC Data

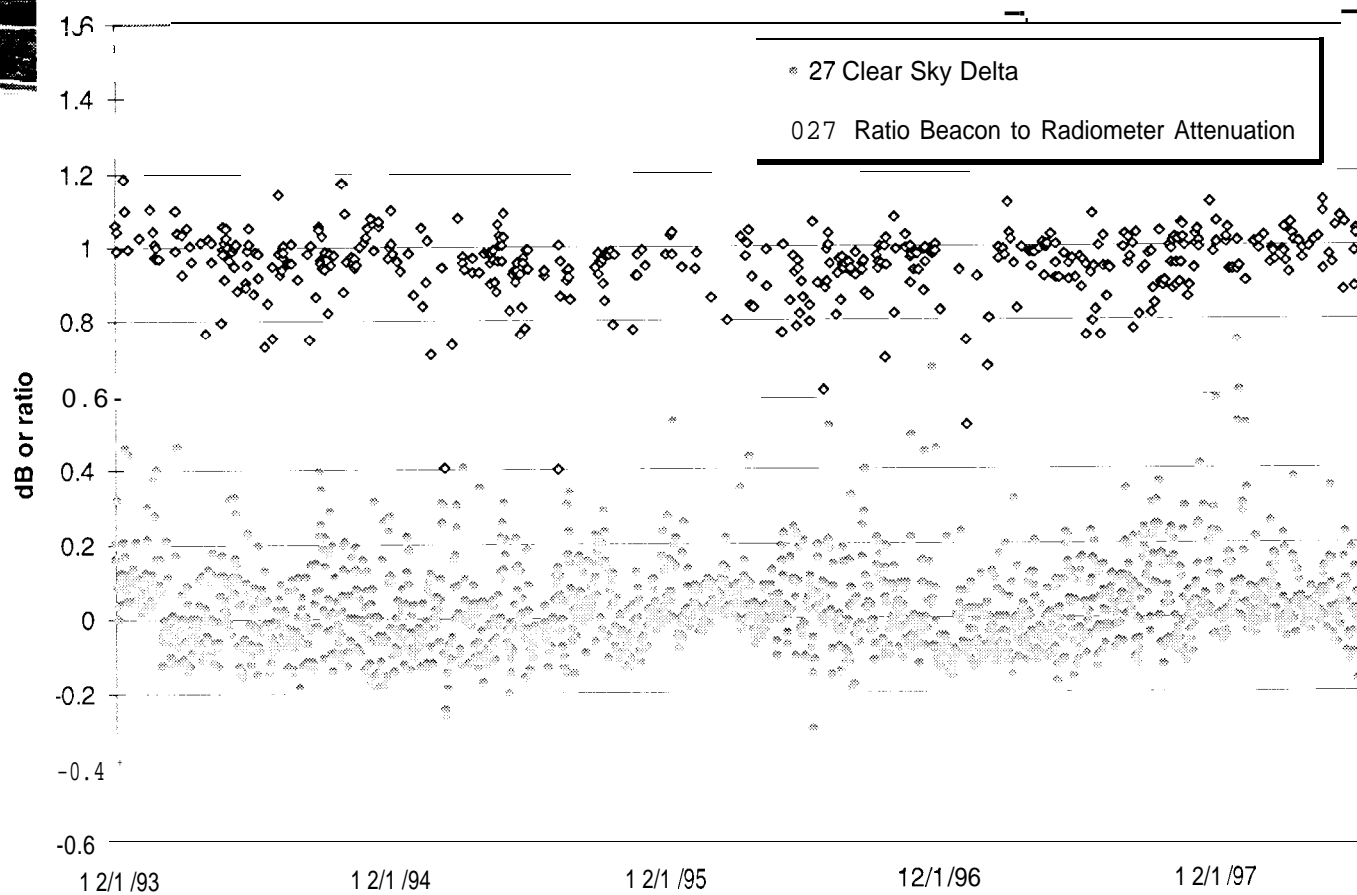
12/1/93 - 6/30/98 OK 20 GHz Calibration





# Reprocessing 4-year OK, MD, BC Data

12/1/93 - 6/30/98 OK 27 GHz Calibration





## ACTS04.XLS Excel Macros

- New user interface and more error prevention codes.
- Two new macros added.
  - ChangeConstMM
  - Marking
- Annual-edf macros now can compare the calculated edfs with attenuation models (need first install Attenuation Model Excel Add-in, which can be found at our web site).
- Current version can not run in Excel 97. Still working on new version.
- Testing version can be found in our ftp address or web page. Comments and suggestions are welcome.



# ACTS04.XLS Excel Macros

ACTS04.XLS



## ACTS04.XLS

- Excel Macros for assisting NASA ACTS  
Propagation Data preprocessing and analysis

By Xuhe Wang

xwang@tornado.caps.ou.edu

DailySummary Plot

Generating Daily summary plots for successive days

Annual\_edf

Calculating annual edf and compare with models

EDF0

Generating Monthly attenuation, rainrate, fade interval, fade duration edfs

Cal\_adjust

Assisting user checking their preprocessing calibration

ChangeConstMM

Change calibration constant for successive monthes

Marking

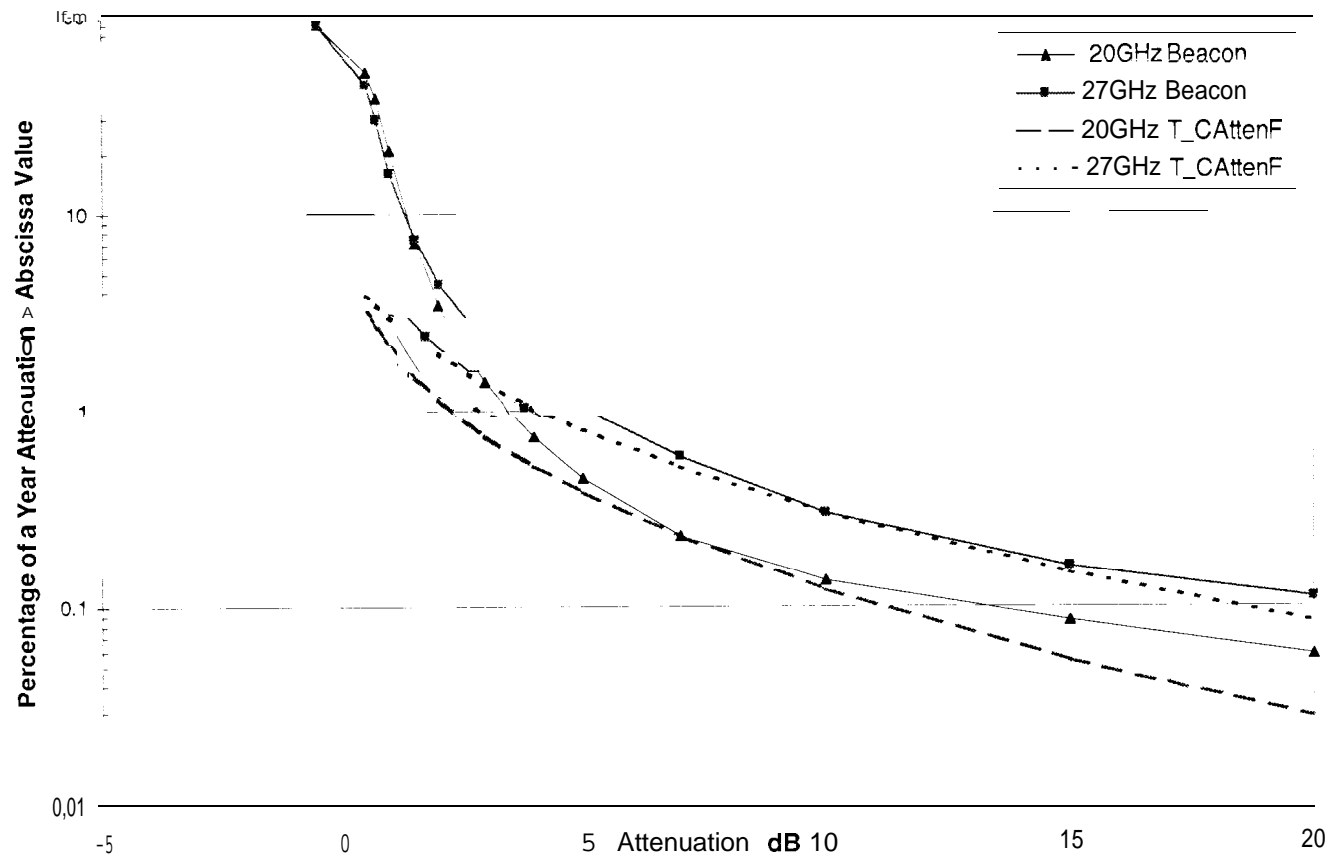
Adding bad marks into a LOG file

Exit



# ACTS04.XLS Excel Macros

9603 -9702md EDF





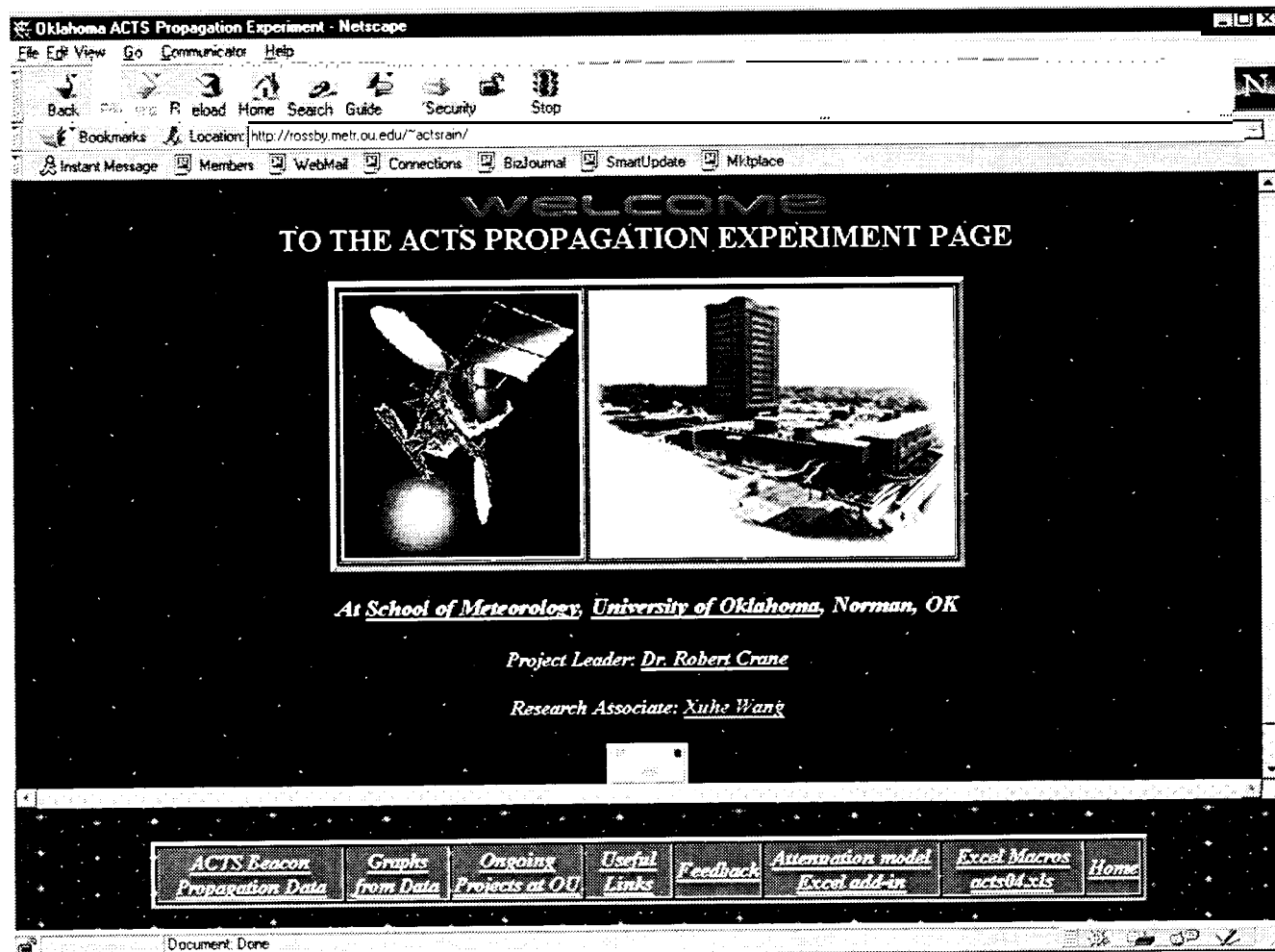
## Oklahoma ACTS Home Page Update

- <http://rossby.metr.ou.edu/~actsrain/>

- The page now has a new look, and many useful links about Ka-band SatCorn.
- A text readme file has been added to Attenuation Model Excel Add-in page, which explains how to use the add-in in more detail.
- A new page - Excel Macros acts04.xls was added. User can get the test version of the macros from there.
- The reprocessed 4-year ACTS propagation data from 7 sites will soon replace the old data and graphs currently kept in the page.



# Oklahoma ACTS Home Page Update





## HDR File Archives Status

- Current HDR files list
  - AK: 960624-960816, 970607-980630 (16 months)
  - BC: 961021-961023, 980312-980625 (5 months)
  - CO: 960801-960930, 980105-980630 (8 months)
  - FL: 960618-960930 (4 months)
  - MD: 960627-980620 (25 months)
  - NM: 960828-970630, 970801 -current (25 months)
  - OK: 96021 7-current (32 months)
- Experimenters please send your HDR files to Univ. of OK.
- HDR files can be made available on CDs.